



ZQ110

OPOS Driver Application Develop Guide

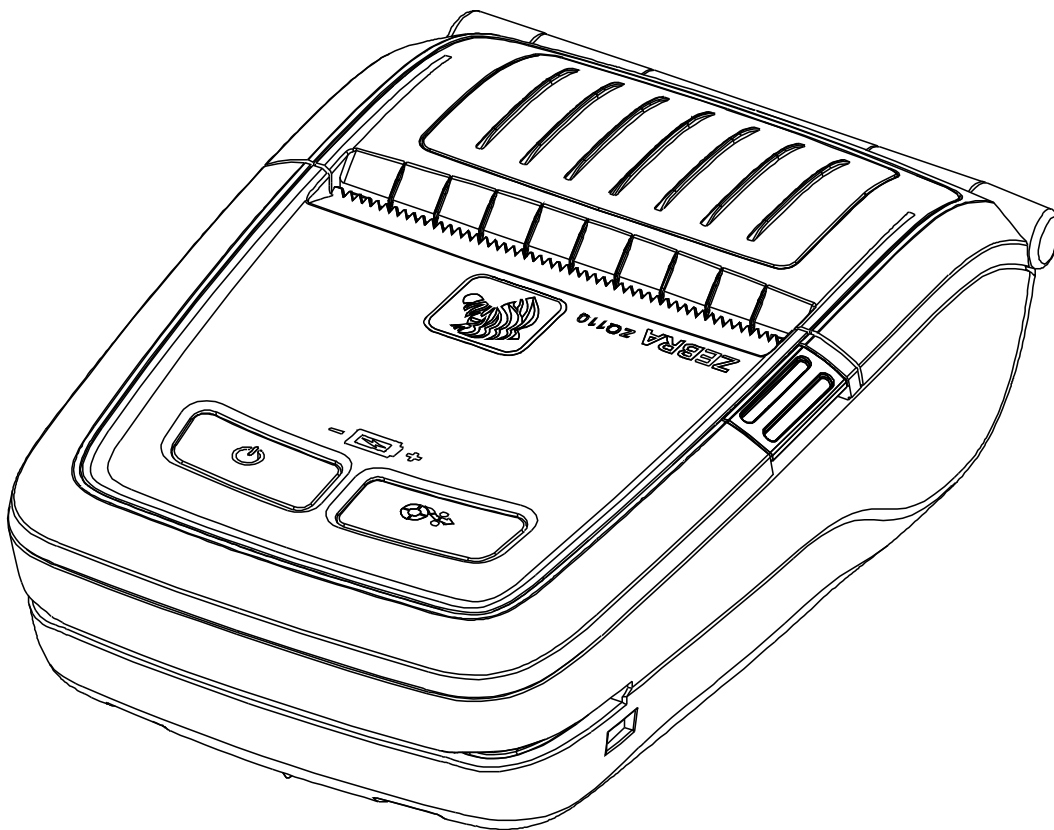


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NOTE: This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet or circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING: Exposure to Radio Frequency radiation. To conform to FCC RF exposure requirements this device shall be used in accordance with the operating conditions and instructions listed in this manual.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Changes or modifications to this unit not expressly approved by Zebra Technologies Corporation could void the user's authority to operate this equipment.

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This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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1. Manual Information

The OPOS Driver Application DevelopGuide explains how to set and configure a device and to develop applications to use the Zebra ZQ110 printer with the OPOS driver.

Before using the printer, set and configure the printer using the OPOS Setup Utility.

Throughout this manual, “OLE for Retail POS” is called “OPOS” and “Unified for Retail POS” is called “UPOS”.

2. Development Environment

2-1 Communication Configuration

Communication Configuration for the serial interface is set in the OPOS Setup Utility.

Printer Model	Baud Rate	Printer Type	Dots Per Inch (dpi)
ZQ110	Not supported	Mono Thermal	203 dpi

* Check the default communication setting. For more details, refer to the user manual included in the printer package.

3. Property/Method

3-1 Printer Type

Property value will be determined by the printer type, as shown in the table below.

3-2 Property Range/Default Value

3-2-1 Capability Property Setting Value

Capability Name	1 Color Thermal : ZQ110
CapCompareFirmwareVersion	FALSE
CapPowerReporting	TRUE
CapStatisticsReporting	FALSE
CapUpdateFirmware	FALSE
CapUpdateStatistics	FALSE
CapTransaction	TRUE
CapCoverSensor	TRUE
CapConcurrentRecSlp	FALSE
CapConcurrentJrnSlp	FALSE
CapConcurrentJrnRec	FALSE
CapCharacterSet	TRUE
CapRecUnderline	TRUE
CapRecPageMode	FALSE
CapCuncurrentPageMode	FALSE
CapRecStamp	FALSE
CapRecRotate180	TRUE
CapRecRight90	FALSE
CapRecPapercut	FALSE
CapRecNearEndSensor	FALSE
CapRecMarkFeed	FALSE
CapRecLeft90	FALSE
CapRecltalic	FALSE
CapRecEmptySensor	TRUE
CapRecDwideDhigh	TRUE
CapRecDwide	TRUE
CapRecDhigh	TRUE
CapRecColor	FALSE
CapRecCartridgeSensor	FALSE
CapRecBold	TRUE
CapRecBitmap	TRUE
CapRecBarCode	TRUE
CapRec2Color	FALSE
CapRecPresent	TRUE

3-2-2 Property Default Value/Range

Property	Range or Value
RecLineCharsList	"32,42"
RecBitmapList	0,L90,R90,180
CharacterSetList	"437,1(Katakana),850,860,863,865,1252,866,852,858,862,864,23(Thai42),1253,1254,1257,27(Farsi),1251,737,775,31(Thai14),32(Hebrew_old),1255,34(Thai11),35(Thai18),36(Cyrillic),857,928,39(Thai16),1256"
RecLineHeight	24
RecLineWidth	384
RecLinePaperCut	5
RecLineSpacing	0~127(Default :16)

3-2-3 POSPrinter Method

Method	Value
beginInsertion	Not Supported
beginRemoval	Not Supported
changePrintSide	Not Supported
clearPrintArea	Supported
cutPaper	Supported
drawRuledLine	Not Supported
endInsertion	Not Supported
endRemoval	Not Supported
markFeed	Not Supported
pageModePrint	Supported (Dot, Ink type printer unsupported)
printBarCode	Supported
printBitmap	Supported
printImmediate	Supported
printMemoryBitmap	Supported
printNormal	Supported
printTwoNormal	Not Supported
rotatePrint	Supported
setBitmap	Supported
setLogo	Supported
transactionPrint	Supported
validateData	Supported

3-2-4 POSPrinter Escape Sequences

Escape Sequence	Value
[#]P	0-100
[#]fP	0-100
[#]sP	Not Supported
sL	Not Supported
[#]B	1-20
tL	Supported
bL	Supported
[#]IF	0-9999
[#]uF Base Pitch [inch]	Supported
[#]rF Maximum[inch]	Not Supported
#E	Supported
#R	Not Supported
#dL	Not Supported
#fT	Supported
[!]bC	Supported
[!][#]uC	Supported
[!]iC	Not Supported
[#]rC	Supported
[!]rvC	Supported
[#]sC	Not Supported
1C	Supported
2C	Supported
3C	Supported
4C	Supported
#hC	Supported
#vC	Supported
[#]fC	Not Supported
[!]tbC	Not Supported
[!]tpC	Not Supported
cA	Supported
rA	Supported
IA	Supported
[!][#]stC	Not Supported
N	Supported

3-2-5 Color Bitmap Printing Support

ZQ110 OPOS Driver supports following image formats:

- GIF
- JPG
- BMP

The image will be converted into monochrome.

4. Extended Functions

This section explains the DirectIO method. This method will operate properly only with a POS printer.

4-1 DirectIO Method

The table(s) below provides the DirectIO command and corresponding description.

Parameter	Explanation	Type
Command	Output format	Long
PData	Number of output data / Value defined by command	Long
PString	Output Data	String

• OPOS DirectIO Command

Command	Description
DISP_DI_OUTPUT	Output defined pString data
DISP_DI_INTERNATIONAL_CHAR	International character set define
PTR_DI_MOBILE_MSR_READ	Read the MSR data
PTR_DI_MOBILE_MSR_READ_TRACK1	Get the Track 1 information from MSR data
PTR_DI_MOBILE_MSR_READ_TRACK2	Get the Track 2 information from MSR data
PTR_DI_MOBILE_MSR_READ_TRACK3	Get the Track 3 information from MSR data
PTR_DI_MOBILE_MSR_READ_CLEAR	Clear the MSR data
PTR_DI_MOBILE_MSR_READ_ENCRYPTION	Read the MSR encryption data

• PTR_DI_OUTPUT

Argument	Command	PTR_DI_OUTPUT
	PData	Null
	PString	Output data
Description	Sends data without any process after checking printer status. "PString" is not affected by "BinaryConversion"	
Return	Result Code	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	0
	OPOS_E_OFFLINE	0
	OPOS_E_FAILURE	0

• PTR_DI_INTERNATIONAL_CHAR

Argument	Command	PTR_DI_INTERNATIONAL_CHAR
	PData	One of the commands: PRN_DI_CHAR_USA PRN_DI_CHAR_FRANCE PRN_DI_CHAR_GERMANY PRN_DI_CHAR_UK PRN_DI_CHAR_DENMARK1 PRN_DI_CHAR_SWEDEN PRN_DI_CHAR_ITALY PRN_DI_CHAR_SPAIN1 PRN_DI_CHAR_NORWAY PRN_DI_CHAR_DENMARK2
	PString	Printing position
Description	Sets International character set. If CharacterSet property value is changed, International character set will be reset.	
Return	Result Code	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_BUSY	0
	OPOS_E_ILLEGAL	0
	OPOS_E_OFFLINE	0
	OPOS_E_FAILURE	0

• PTR_DI_MOBILE_MSR_READ

Argument	Command	PTR_DI_MOBILE_MSR_READ
	PData	Null
	PString	Null
Description	Read the MSR data.	
Return	Result Code	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_ILLEGAL	0

• PTR_DI_MOBILE_MSR_READ_TRACK

Argument	Command	PTR_DI_MOBILE_MSR_READ_TRACK1 PTR_DI_MOBILE_MSR_READ_TRACK2 PTR_DI_MOBILE_MSR_READ_TRACK3
	PData	Null
	PString	Appropriate Track information
Description	Get the Track information from MSR data.	
Return	Result Code	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_ILLEGAL	0

• PTR_DI_MOBILE_MSR_READ_CLEAR

Argument	Command	PTR_DI_MOBILE_MSR_READ_CLEAR
	PData	Null
	PString	Null
Description	Clear the MSR data.	
Return	Result Code	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_ILLEGAL	0

• PTR_DI_MOBILE_MSR_READ_ENCRYPTION

Argument	Command	PTR_DI_MOBILE_MSR_READ_ENCRYPTION
	PData	Null
	PString	Null
Description	Read the MSR encryption data.	
Return	Result Code	ResultCodeExtended
	OPOS_SUCCESS	0
	OPOS_E_ILLEGAL	0

4-2 DirectIOEvent Event

Not used.

5. Error Information

This section explains returned error information when using POS Printer methods. For more details, please refer to the UPOS specifications.

5-1 ResultCode List

• ClaimDevice

Method	Result Code	ResultCodeExtended
ClaimDevice	OPOS_E_ILLEGAL	OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_MECHANICAL
		OPOS_EPTR_CUTTER
		OPOS_EPTR_OVERHEAT
		OPOS_EPTR_REC_EMPTY
		OPOS_EPTR_JRN_EMPTY

• CheckHealth

Method	Result Code	ResultCodeExtended
CheckHealth	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	0
	OPOS_E_OFFLINE	0
	OPOS_E_OFFLINE	0
	OPOS_E_FAILURE	OPOS_EPTR_UNRECOVERABLE
		OPOS_EPTR_CUTTER
		OPOS_EPTR_MECHANICAL
		OPOS_EPTR_OVERHEAT

• ClearOutput

Method	Result Code	ResultCodeExtended
ClearOutput	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0

• DirectIO

Method	Result Code	ResultCodeExtended	
DirectIO	OPOS_SUCCESS	0	
	OPOS_E_CLOSED	0	
	OPOS_E_CLAIMED	0	
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS_E_ILLEGAL	0	
	OPOS_E_OFFLINE	0	
	OPOS_E_FAILURE		OPOS_EPTR_COVER_OPEN
			OPOS_EPTR_UNRECOVERABLE
			OPOS_EPTR_CUTTER
			OPOS_EPTR_MECHANICAL
	OPOS_E_EXTENDED		OPOS_EPTR_OVERHEAT
			OPOS_EPTR_COVER_OPEN
			OPOS_EPTR_JRN_EMPTY
		OPOS_EPTR_REC_EMPTY	

• PrintNormal

Method	Result Code	ResultCodeExtended	
PrintNormal	OPOS_SUCCESS	0	
	OPOS_E_CLOSED	0	
	OPOS_E_CLAIMED	0	
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS_E_ILLEGAL	0	
	OPOS_E_OFFLINE	0	
	OPOS_E_FAILURE		OPOS_EPTR_UNRECOVERABLE
			OPOS_EPTR_CUTTER
			OPOS_EPTR_MECHANICAL
			OPOS_EPTR_OVERHEAT
	OPOS_E_EXTENDED		OPOS_EPTR_COVER_OPEN
			OPOS_EPTR_JRN_EMPTY
			OPOS_EPTR_REC_EMPTY

• PrintImmediate

Method	Result Code	ResultCodeExtended	
PrintImmediate	OPOS_SUCCESS	0	
	OPOS_E_CLOSED	0	
	OPOS_E_CLAIMED	0	
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS_E_ILLEGAL	0	
	OPOS_E_OFFLINE	0	
	OPOS_E_FAILURE		OPOS_EPTR_UNRECOVERABLE
			OPOS_EPTR_CUTTER
			OPOS_EPTR_MECHANICAL
			OPOS_EPTR_OVERHEAT
	OPOS_E_EXTENDED		OPOS_EPTR_COVER_OPEN
			OPOS_EPTR_JRN_EMPTY
			OPOS_EPTR_REC_EMPTY

- **CutPaper**

Method	Result Code	ResultCodeExtended	
CutPaper	OPOS_SUCCESS	0	
	OPOS_E_CLOSED	0	
	OPOS_E_CLAIMED	0	
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS_E_ILLEGAL	0	
	OPOS_E_OFFLINE	0	
	OPOS_E_FAILURE		OPOS_EPTR_UNRECOVERABLE
			OPOS_EPTR_CUTTER
			OPOS_EPTR_MECHANICAL
			OPOS_EPTR_OVERHEAT
	OPOS_E_EXTENDED		OPOS_EPTR_COVER_OPEN
			OPOS_EPTR_JRN_EMPTY
OPOS_EPTR_REC_EMPTY			

- **RotatePrint**

Method	Result Code	ResultCodeExtended	
RotatePrint	OPOS_SUCCESS	0	
	OPOS_E_CLOSED	0	
	OPOS_E_CLAIMED	0	
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS_E_ILLEGAL	0	
	OPOS_E_OFFLINE	0	
	OPOS_E_FAILURE		OPOS_EPTR_UNRECOVERABLE
			OPOS_EPTR_CUTTER
			OPOS_EPTR_MECHANICAL
			OPOS_EPTR_OVERHEAT
	OPOS_E_EXTENDED		OPOS_EPTR_COVER_OPEN
			OPOS_EPTR_JRN_EMPTY
OPOS_EPTR_REC_EMPTY			

- **PrintBitmap**

Method Name	Result Code	ResultCodeExtended	
PrintBitmap	OPOS_SUCCESS	0	
	OPOS_E_CLOSED	0	
	OPOS_E_CLAIMED	0	
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS_E_ILLEGAL	0	
	OPOS_E_OFFLINE	0	
	OPOS_E_FAILURE		OPOS_EPTR_UNRECOVERABLE
			OPOS_EPTR_CUTTER
			OPOS_EPTR_MECHANICAL
			OPOS_EPTR_OVERHEAT
	OPOS_E_NOEXIST		0
	OPOS_E_EXTENDED		OPOS_EPTR_COVER_OPEN
OPOS_EPTR_JRN_EMPTY			
OPOS_EPTR_REC_EMPTY			
OPOS_EPTR_SLP_EMPTY			
OPOS_EPTR_TOOBIG			
		OPOS_EPTR_BADFORMAT	

- SetBitmap

Method	Result Code	ResultCodeExtended	
SetBitmap	OPOS_SUCCESS	0	
	OPOS_E_CLOSED	0	
	OPOS_E_CLAIMED	0	
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS_E_ILLEGAL	0	
	OPOS_E_OFFLINE	0	
	OPOS_E_FAILURE		OPOS_EPTR_UNRECOVERABLE
			OPOS_EPTR_CUTTER
			OPOS_EPTR_MECHANICAL
			OPOS_EPTR_OVERHEAT
	OPOS_E_NOEXIST		0
	OPOS_E_EXTENDED		OPOS_EPTR_COVER_OPEN
			OPOS_EPTR_JRN_EMPTY
OPOS_EPTR_REC_EMPTY			
OPOS_EPTR_SLP_EMPTY			
OPOS_EPTR_TOOBIG			
		OPOS_EPTR_BADFORMAT	

- SetLogo

Method	Result Code	ResultCodeExtended
SetLogo	OPOS_SUCCESS	0
	OPOS_E_CLOSED	0
	OPOS_E_CLAIMED	0
	OPOS_E_NOTCLAIMED	0
	OPOS_E_DISABLED	0
	OPOS_E_ILLEGAL	0

- TransactionPrint

Method	Result Code	ResultCodeExtended	
TransactionPrint	OPOS_SUCCESS	0	
	OPOS_E_CLOSED	0	
	OPOS_E_CLAIMED	0	
	OPOS_E_NOTCLAIMED	0	
	OPOS_E_DISABLED	0	
	OPOS_E_ILLEGAL	0	
	OPOS_E_OFFLINE	0	
	OPOS_E_FAILURE		OPOS_EPTR_UNRECOVERABLE
			OPOS_EPTR_CUTTER
			OPOS_EPTR_MECHANICAL
			OPOS_EPTR_OVERHEAT
	OPOS_E_NOEXIST		0
	OPOS_E_EXTENDED		OPOS_EPTR_COVER_OPEN
			OPOS_EPTR_JRN_EMPTY
OPOS_EPTR_REC_EMPTY			
OPOS_EPTR_SLP_EMPTY			



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